

INTERNATIONAL FEDERATION OF AGRICULTURAL
RESEARCH SYSTEMS FOR DEVELOPMENT (IFARD)

Latin American and Caribbean Chapter

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INTERNATIONAL DEVELOPMENT RESEARCH CENTRE (IDRC)

Regional Office for
Latin America and the Caribbean

FINAL REPORT OF THE
WORKSHOP ON AGRICULTURAL RESEARCH MANAGEMENT

Proposal for a Regional Project for the
Training of Agricultural Research Managers



3-A-82-4832

Bogotá, March 21-23, 1983
Workshop Reports No. 1 (English)

Archiv
630(8)
168

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WORKSHOP ON AGRICULTURAL RESEARCH MANAGEMENT

SUMMARY OF RESULTS

INTRODUCTION

This paper sums up the main points and results of the Workshop on Agricultural Research Management held in Bogotá in March, 1983 under the joint auspices of IDRC and IFARD.

It contains: (1) a section on events leading up to the Workshop, (2) a description of its most important aspects, including a summary of the discussions, and (3) a proposal for future action, drawn up on the basis of the debates.

1. BACKGROUND

1.1. Need for the Workshop

There has been growing interest in Latin America in agricultural research as well as in finding solutions to its main problems.

Agricultural research has made substantial contributions to the economic development of Latin American countries, particularly in the last twenty years.

However, it is generally agreed that agricultural research is now facing a new and difficult problem, which is limiting the contribution required from it by the countries of the region.

It has become increasingly clear that this problem has to do not only with factors relating to the allocation of funds for research or the technical competence of the institutes, but also, and to a greater extent, with factors relating to their managerial efficiency. There have, in fact, been many cases of research programmes well provided with human and financial resources but failing to achieve their objectives because of inadequate organizational and management practices.

There is, therefore, a strong feeling that a major, coordinated effort to improve the management of agricultural research would go a long way towards streamlining the process of generation and adoption of new technologies in agriculture, to the ultimate benefit of economic and social development.

1.2. Events Leading up to the Workshop

The above situation was analyzed at the Second Symposium of Latin American and Caribbean Directors of National Agricultural Research Systems, held in Madrid in September, 1982.

At this Symposium, the Latin American and Caribbean Chapter of the International Federation of Agricultural Research Systems for Development (IFARD) was recommended to organize, in cooperation with the International Development Research Centre (IDRC), a workshop to discuss and assess alternative courses of action regarding the issue of improving skills in the management of agricultural research programmes.

The overall objective of the action being envisaged is to enhance the management capacity of agricultural research institutes. But before initiating anything, a general discussion was thought to be necessary on this subject in order to identify alternative courses of action. The workshop that is summed up in this paper was the outcome of that decision and constitutes a first step towards formulating and implementing a programme to develop management capacity in agricultural research.

2. WORKSHOP OBJECTIVES AND PARTICIPANTS

2.1. Objectives

The general objective of the Workshop was to draw up a framework of reference and work scheme for undertaking concrete action in the field of research management. For this reason, three specific points were recommended for discussion at the Workshop:

- a) Determining the main topics that should be considered as essential elements of the general problem of agricultural research management.
- b) Identifying causes and effects observed in this problem and their implications for possible training programmes, taking into account similarities and differences between the problems of management in general and those of agricultural research management in particular.

- c) Defining the types of activities or events that should be promoted in the region to strengthen the management capacity of agricultural research institutes (e.g. seminars, workshops, short training courses for research personnel, research on these topics or a combination of these activities).

In order to achieve the above objectives, the Workshop provided an opportunity for identifying activities on this subject, inside or outside the region, the type of participants that should be included in training courses, and the main advantages and disadvantages of the various options or types of activities.

2.2. Participants

Given the nature and objectives of the Workshop, it was thought that participants should be both interested and experienced in the subject. Accordingly, the people invited to participate had long experience in different questions pertaining to the management of agricultural research. They were:

- a) A small group of present or former directors of agricultural research institutes from different countries of the region, with substantial experience in research management, both at the institutional and specific programme levels.
- b) People who had carried out research or studies on the management of research, or who had taken active part in training programmes. They were: Dr. Roberto Martínez Nogueira of Buenos Aires, Dr. Jacques Marcovitch of Sao Paulo, and Dr. Martín Piñeiro, Coordinator of the PROTAAL Project on Generation and Transfer of Agricultural Technology, in Latin America.

The expertise of the participants was a guarantee of the appropriate conceptual delineation of the problem, the experiences discussed and estimation of the feasibility of the action proposed. (See Annex 1 for a detailed list of the participants).

2.3. Papers Presented

Debate at the Workshop evolved round a basic paper prepared by Dr. Roberto Martínez Nogueira.

Annex 2 contains a list of papers presented by some other participants as a contribution to the debate.

3. SUMMARY OF DISCUSSIONS

3.1. Summary of Presentations

Four presentations were made on Monday, March 21:

- a) The question of agricultural research and training of managers, by Dr. Roberto Martínez Nogueira.
- b) IDRC's activities in the field of research management, by Dr. Fernando Chaparro.
- c) Experience at Sao Paulo University in programmes for the education and training of research managers, by Dr. Jacques Marcovitch.
- d) ISNAR's activities in the field of agricultural research management and projection into the future, by Dr. William Gamble.

The paper presented by Dr. Roberto Martínez Nogueira served as a framework of reference for the debate. It outlines the basic dimensions to be used in analyzing the management of research institutes, with emphasis on institutional objectives, institutional strategies, policies and their translation into programmes, projects, and lastly, institutional structures and procedures, including a section on the relationship of institutes with the environments in which they operate.

The paper by Dr. Martínez also deals with specific problem areas prevailing in research institutes and focuses his analysis on the relationship between:

- Sectorial policies and institutional objectives.
- Definition of institutional profiles and the programming of activities.
- Policies and plans and the needs of programme and project management.
- Research, transfer of technology and extension.
- The institute's geographic dispersion, viability, productivity and its organizational structure.

The discussions that followed revealed a meeting of minds that can be summed up in the following statements:

- a) The research manager is basically a troubleshooter, in respect of internal and external problems.
- b) He must cope with many different users of research, each having particular needs.
- c) The relationship between research, public policies, and the administrative apparatus of the State must also be taken into account.
- d) It would be useful to study the interrelation between research conducted at public institutions and research carried out elsewhere.
- e) It is necessary to strengthen the particular characteristics of the organization of agricultural research.
- f) It is possible to improve the capacity and efficiency of research managers through specific training programmes (i.e. workshops, short courses, etc.).

It was agreed that, although the Workshop was mainly concerned with improvement of the abilities of research managers, it was also necessary to diagnose the crisis and problems of research, since the difficulties encountered may not necessarily be attributable entirely to the incompetence of research managers. In order to improve the competence of research managers, it is essential to enhance their analytical ability by providing them with reliable and appropriate information.

It became evident from the description of current experiences in this question, that there are three major aspects or dimensions that are involved in research management:

- a) At the macro-institutional level: strategy planning, policy-making, and defining priorities.
- b) Analyzing the environment of research, which includes both the interaction with users(application of research results), and the interaction with other institutions related to agricultural research (i.e. government, associations of producers, rural development agencies, etc.).
- c) At the micro-institutional level, the management of resources (i.e. financial, human, physical) and the organization and monitoring of programmes and projects, are of paramount importance.

A common element for all three aspects is the need to have an information system for managerial decision-making. This refers to information as a management tool, oriented towards the identification of research needs and the continuous monitoring of research programmes. ^{1/}

In discussing the effects of environmental conditions on the development of management capacity in agricultural research, stress was laid on the need for an adequate understanding of the importance of the subject by the public and the State, and for mechanisms for disseminating more appropriate organizational and management practices.

There was also agreement in pointing out that teaching and training programmes in research management must be set within a broad framework, which includes the system of science and technology in a given country.

4. PROPOSAL FOR ACTION

4.1. General Considerations

- a) The discussions revealed a common interest on the part of agricultural research institutes to carry out cooperative and systematic activities to improve their organizational and managerial competence. They also agreed in their evaluation of the needs to be satisfied and in their conception of the orientation and contents of such needs.
- b) Moreover, it was emphasized that the time was particularly ripe for undertaking such action. The importance of the problem has been pointed out by different spheres; diverse institutions have expressed their interest in the subject, and there is a strong feeling amongst those engaged in agricultural research that it is essential to attend to the problems of institutional organization and management, if institutes are to play a more effective and socially relevant role in the process of development of the sector. At the same time, the region has substantial academic and professional resources that can be mobilized to transmit knowledge on management, to research institutes.
- c) The existence of such feelings, of interest on the part of institutes, and of resources available for providing the

^{1/} See Basilio Rojas: "Sistemas de Información para la Administración de Investigaciones Agrícolas"; Bogotá, IDRC (LARO), May 1983.

necessary services for the development of such organizational and management capacity, provides an opportunity for launching multiple, convergent activities so as to produce a considerable impact on the effectivity of agricultural research institutes.

- d) Such activities should be organized in terms of a Regional Programme that ensures convergence of all efforts, optimum use of the available resources, creation of facilities for exchanging experiences, and the interinstitutional transfer of the expertise gained.
- e) The Programme should, therefore, have a significant impact on the management capacity of agricultural research institutes, as well as on general appreciation of the importance of organizational and management questions relating to agricultural research, especially within government spheres that participate in formulating and implementing global policies on agriculture and science and technology. The Programme should also strengthen existing capacity in Latin America for doing research on this subject, for developing management technologies, for providing aid services, and for providing training in the field of management of agricultural research.
- f) The Programme will help to bring about progress in a field in which, so far, only isolated and sporadic efforts have been made, i.e. the field of management of scientific and technological activities. Consequently, the conception, development and outcome of the Programme could be of extraordinary interest and importance to institutions engaged in other sectors of the economy, such as industry and mining. Hence it is foreseen that there will be exchange of experiences, dissemination of the activities of the Programme, and development and adoption of organizational and management technologies. This means that the Programme could have an impact beyond the group of agricultural research institutes.

4.2. Objectives, Nature and Participants

4.2.1. Programme Objectives

The overall objective of the Programme is to develop the local capacity of organizing and managing agricultural research.

Its more specific objectives are:

- a) To improve the managerial competence of agricultural research institutes, through education and training in the subject of institutional policies, and their organization and management.
- b) To develop the region's existing academic and professional capacity for analyzing the problem of agricultural research management, for generating information on it, and for providing teaching services and organizational assistance on this subject.

4.2.2. Nature of the Programme

The Programme shall have the following characteristics:

- a) The Programme is the outcome of an initiative by those standing to benefit from its results, i.e. institutes of agricultural research. And the needs to be satisfied by the Programme, as well as its objectives and the activities to be carried out under it, have been and will be defined by the research institutes themselves.
- b) The Programme will be conducted by these same beneficiaries. This is to ensure that its implementation will be oriented towards resolving problems identified by the institutes, and that its results will be transferred to the institutes and will have a significant impact on the development of their management capacity.
- c) The Programme will use existing resources in Latin America, capable of helping to carry out teaching and research activities on the management of agricultural research, according to their field of specialization and particular expertise.
- d) The Programme must be flexible in design so that, in implementing it, the different circumstances and conditions faced by the beneficiaries of its activities can be taken into account. This flexibility will also make it possible to incorporate new subjects relating to the new needs of agricultural research institutes, arising either from their development or from the requirements of sectorial development policies.

- e) Implementation of the Programme shall be decentralized, and its activities shall be located according to the following criteria: (1) making the best use of the academic and professional resources available; (2) the possible advisability of giving a common treatment to organizational problems of the same kind; and (3) the multiplier effect of such activities at the subregional, national or institutional levels.
- f) The Programme must ensure regular, systematic and oriented interaction between agricultural research institutes and academic, research and teaching institutions, capable of contributing to the development of activities under this Programme.
- g) The Programme will consist of a number of different activities directed towards the education and training of managers, who would then be vehicles for transferring skills in institutional management. Besides these activities, there will be other complementary ones directed towards the strengthening of institutions that may provide information services for solving the problems of, or training services on the subject of, agricultural research management.
- h) All agricultural research institutes will be encouraged to use the various services or activities of institutions dealing with problems of organization and management. Thus, the institutes would be able to plan their participation in the Programme according to their needs. To make this possible, the Programme will consist of varied but all-embracing activities on the subject of the management of agricultural research.

4.2.3. Participants

Participation in the Programme will be open to:

- a) Latin American and Caribbean institutes of agricultural research.
- b) Academic institutions that may provide research, information or training services in the field of agricultural research management.

The second type of participants refers to such institutions as the group at Sao Paulo University, with experience in the administrative area of science and technology; the Buenos Aires group, with specialization in the contextual, policy and strategy aspects of agricultural research institutes and their relationship with the organizational aspects; and the Colombian group, represented by INCOLDA, with experience in management techniques.

4.3 Subjects Covered by the Programme

Programme activities will be directed towards training and information generation for solving problems in the following areas:

- a) The relationship of agricultural research institutes with the procedures for the formulation, implementation, monitoring and evaluation of sectorial and regional policies on rural development and on agricultural research.
- b) The agricultural research institute in relation to the context in which it operates, with special attention to particular needs arising from: the nature of those whom its activities serve, the products on which it does research, the production structure of the region in which it operates, the sectorial importance of the region's production, the particular social organization of producers, etc.
- c) Strategic planning, including problems of identification of research priorities and of resource allocation.
- d) Techniques for formulating, implementing, monitoring, controlling and evaluating programmes and projects.
- e) Management of human, financial and material resources.
- f) Programme and project management, and coordination of research teams, especially multidisciplinary ones.
- g) Management information systems.
- h) Dissemination of institutional products (transfer of technology and relationship with the environment).
- i) Evaluation of institutional capacities.

- j) Organizational development and change.
- k) Methods of setting up and organizing agricultural research. For example, what is the best way of organizing research to facilitate research on agricultural production systems (systems approach) and on-farm research? How does it differ from traditional experimental station research?

4.4. Beneficiaries of Programme Activities

Programme activities are oriented to the following categories of beneficiaries:

- a) Senior directors of agricultural research institutes.
- b) Programme and project directors.
- c) Directors of supporting services.
- d) Heads of planning offices within the research institute.
- e) Staff of the following types of organizations, on account of their involvement with the question of agricultural research institutes:
 - Science and technology planning agencies.
 - Ministries of Agriculture.
 - Agencies responsible for managing various instruments of agricultural policy.

Consideration will also be given to participation by representatives of associations of producers or suppliers, in order to create a greater understanding of certain operational aspects of the process of adopting and introducing technical change.

4.5. Relationship Between the Different Topics of Research Management and the Different Levels or Research Managers.

Training activities will have different coverage and orientation, depending on the area of duties and responsibilities of the participants in each activity (categories of users).

A tentative outline of the main topics that are of interest to the different categories of users, or levels of research managers, is as follows:

- a) For the Level of Institutional Management (top managers of Agricultural research institutes):
- Link between institutional activities and global, sectorial and regional policies.
 - Management of financial resources; financial mechanisms for agricultural research.
 - Technological information services.
 - Overall view of the process of scientific and technological research.
 - Analysis of the milieu of agricultural research institutes.
 - Strategic planning, identification of research priorities and resource allocation.
 - Forecasting techniques.
 - Transfer of research results and diffusion of technology.
 - Institutional evaluation and programme evaluation.
 - Management information system (for decision-making).
 - Organizational implications of different research approaches (i.e. research on production systems versus disciplinary research; on-farm research versus experimental station research).
- b) For the Level of Institutional Policy Formulation and of Organizational Analysis (Planning offices of research institutes and sectorial planning offices of Ministries of Agriculture):
- Link between institutional activities and global, sectorial and regional policies.
 - Strategic and institutional planning.
 - Project and programme formulation, evaluation and monitoring.

- Organizational development and change.
- Analysis and design of organizational structure.
- Management of human resources.
- Transfer of technology and of research results.

c) For the Level of Programme and Project Management:

- Analysis of the environment of agricultural research institutes.
- Methodology for identifying production problems and their implications for research and extension activities.
- Organizational implications of different research approaches (i.e. research on production systems versus disciplinary research; on-farm research versus experimental station research).
- Techniques for formulating, evaluating, monitoring and controlling programmes and projects.
- Leadership and management of unidisciplinary and multidisciplinary teams.
- Transfer of Technology and of research results.
- Overall view of administrative procedure.

d) For the Level of Management of Supporting Services

- Management of research infrastructure.
- Management of financial resources.
- Selection and purchase of equipment.
- Personnel management.
- Technological information systems.
- Management information systems.
- Overall view of the process of scientific and technological research.

Figure 1 presents a graphic description of the main organizational subsystems and their corresponding syllabi, as described above.

4.6. Instruments of Action

The Regional Programme that is being proposed consists of three types of activities:

- a) Training activities.
- b) Research activities.
- c) Dissemination and promotion activities.

A brief description of each follows. It should also be pointed out that the programme is conceived in terms of "modules", that may be progressively implemented. This modular approach gives flexibility to the programme.

4.6.1. Training Activities

- a) Regional Seminars for the Institutional Management Level.

For this level, short seminars will be organized lasting about a week, so as to facilitate attendance by directors general of the agricultural research institutes participating in the Programme. This type of seminar is aimed at top managers.

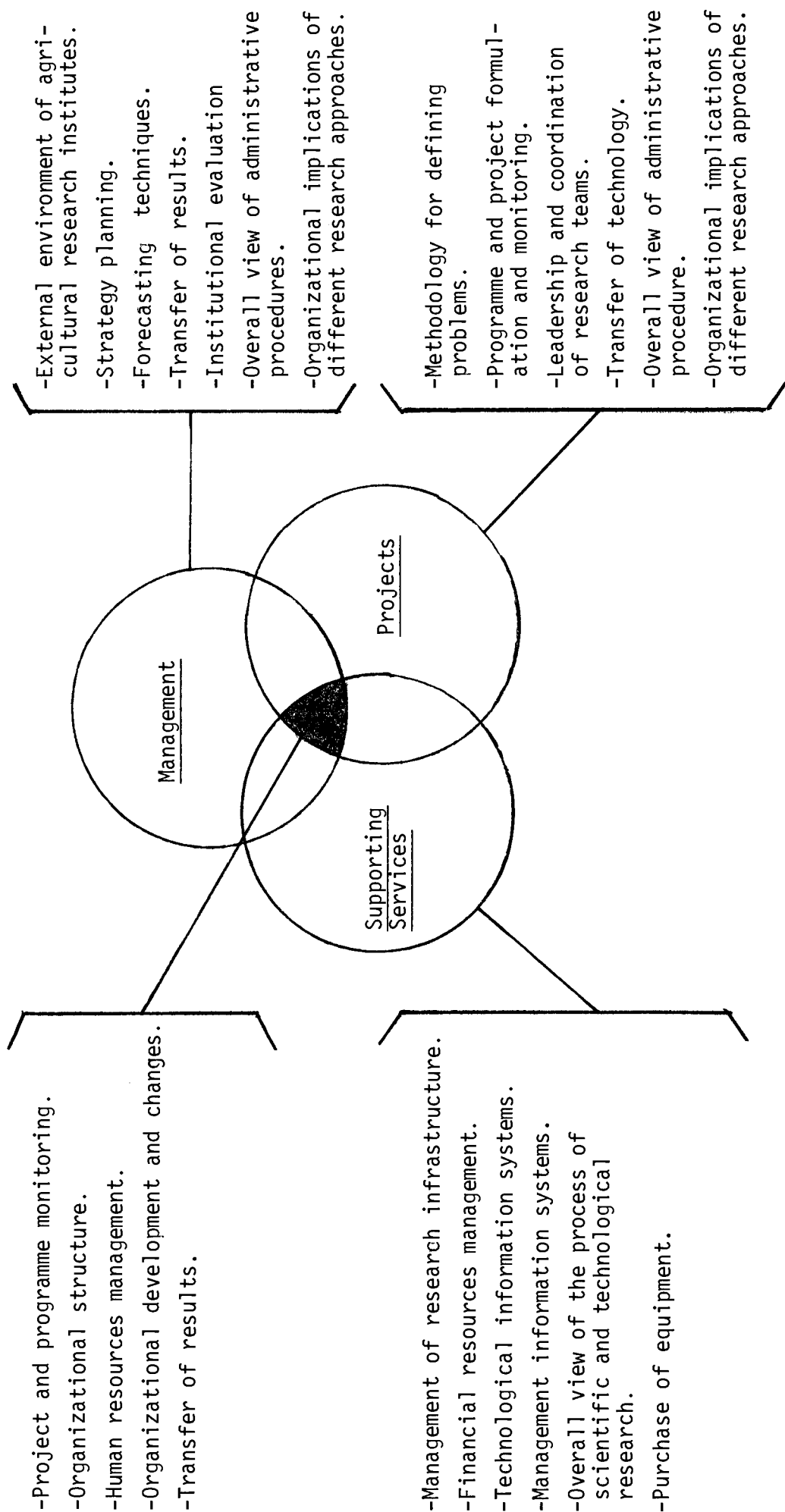
These seminars will provide an opportunity to compare prospects and experiences, to explore new subjects for inclusion in the different training activities, to identify organizational and management needs and to discuss alternative institutional strategies.

Each seminar will focus on one or two of the subjects listed in the preceding section (see level (a) of section 4.5), hopefully integrating research or case studies that are being done in the region on these topics.

FIGURE No. 1

Agricultural Research Institutes :

Organizational Subsystems and Questions of Major Interest in Research Management



Accordingly, these seminars will be held at the headquarters of the academic institutions in charge of such studies or research projects; this in itself will be an additional means of achieving greater interaction between the two types of institutions participating in the Programme.

These seminars will be organized as a series of workshops, dealing consecutively with the different subjects set for this level. The series is scheduled to start off with the topics of policy analysis and analysis of the external environment of agricultural research institutes, followed by the topics of strategic planning and institutional design (organizational implications of different research approaches).

b) National Courses for the Levels of Policy-making, Programme and Project Management, and Supporting Services Management.

These courses will be about a month long, and are intended for members of agricultural research institutes involved with the management and implementation of programmes and projects or the management of supporting services. They will also be attended by staff of governmental and other national agencies, whose policies and measures affect the operations of agricultural research institutes.

These seminars will be held at the institutes of agricultural research.

They will be conducted with the help of the agricultural research institutes and the management research groups participating in the Programme, which shall provide training staff, bibliographical material and teaching aids.

These courses will be oriented towards the more in depth analysis of the main questions of agricultural research management, so as to bring about a better understanding of them, and also towards the handling of fundamental conceptual and operational tools (management techniques, evaluation methodologies, etc.).

c) International (Regional) Courses for the Levels of Policy-making, Programme and Project Management and Supporting Services Management.

These courses will be held at the headquarters of the academic institutions participating in the Programme. They will be about a month or six weeks long, each one covering a specific range of topics chosen from the list that appears in points (b), (c) and (d) in section 4.5. They will have a more specialized orientation than the foregoing, since their purpose will be to train personnel having a greater grasp of organizational and management tools. The trainees will come from different countries and should ideally carry out reasonably similar duties.

These courses will be taught mainly by the members of the institutions in which they are held. Institutions will be selected for this purpose on the basis of their competence and specialization in the particular subject of the course.

Where the subject of the course calls for the participation of two such institutions, the possibility will be considered of holding the course in two immediately consecutive modules at both institutions, or of combining staff from both institutions.

At these courses national experiences will be compared, the findings of studies performed will be presented, and the trainees will be made to take part in research work.

d) Scholarships

The project provides for granting a limited number of scholarships for postgraduate training in management, with specialization in the management of agricultural research, at academic institutions inside or outside the region.

It is intended thereby to develop the capacity available for training, research and management in this field.

4.6.2. Research Activities

a) Objectives of Research Activities

Research activities will be directed towards:

- i) Creating a body of knowledge on the problems of research management, that could help to solve concrete problems faced by agricultural research institutes.
- ii) Developing management techniques adapted to the needs of agricultural research institutes and to the particular conditions of Latin America.
- iii) Developing teaching material to be used in the training activities of the Programme and in similar activities carried out by agricultural research institutes, as part of their personnel development plans, or by other institutions interested in the subject.

b) Subjects for Research

The following is a tentative list of some possible subjects for research:

- i) Research directed towards creating a body of knowledge for solving problems such as:
 - Link between sectorial and regional policies on the one hand, and agricultural research on the other.
 - Relationship between the nature of the productive context in which the agricultural research institute operates and its organizational and management problems.
 - Relationship between the institutional profile of the institute and the programming of its activities.
 - Relationship between research and the transfer of results.

- Participation by users (i.e. small producers) in the research process.
 - Relationship between geographic dispersion of activities and the viability and productivity of the institute.
- ii) Research aimed at developing and adapting management technologies.
- Methodologies for evaluating projects.
 - Methodologies for institutional evaluation.
 - Methodologies for evaluating impacts of research projects and of technology adoption.
 - Techniques for managing multidisciplinary teams.
 - Developing alternative institutional and organizational structures, taking into account different research approaches (i.e. research on cropping systems, on-farm research, etc.).
 - Designing means of participation of the producer and other users in the research process.
 - Techniques for transferring research results and technology to the producer.
- iii) Thirdly, one of the specific products of the re-research component of the Programme is the development of teaching material to be used in the previously mentioned activities. Preparation of teaching material refers to the subjects listed in the two preceding paragraphs and to other specific subjects covered by the seminars and courses planned.

4.6.3. Dissemination and Promotion of the Importance of
Developing a Research Management Capacity and of
the Role of Agricultural Research in Development.

Three types of activities are planned to bring about adequate awareness and understanding of this question:

a) Publications

These publications will refer to:

- Research results
- Teaching material

b) Information Bulletin

An information bulletin or newsletter will be published as part of the Programme, for the purpose of establishing a means of communication between the members of the network of institutions. This bulletin will contain information on Programme activities, notes on the subject of agricultural research management, and news on the institutional development of the entities which make up the network.

c) Promotional Seminars

These will be short seminars, with participation by personalities connected with agricultural research or with the political and entrepreneurial milieus. These short seminars would not only discuss the problems of research management, but also the importance and role of agricultural research in development (given their objective of creating an awareness of these issues).

4.7. Organizational Structure of the Programme

As mentioned above, the organizational structure of the Programme must satisfy the conditions of flexibility and decentralization in the implementation of activities; this can be achieved by creating a multi-institutional network that is managed by the Programme's users themselves.

This network of institutions will be composed of agricultural research institutions participating in the Programme, and institutions providing training and research services. These will include the groups of Sao Paulo, Buenos Aires and Colombia, and other similar institutions that may have academic competence and expertise in the subject.

The following mechanisms are envisaged for orienting, managing, coordinating, monitoring and evaluating Programme performance:

a) Programme Coordination

A small interinstitutional Coordinating Committee will be created, made up by the international agencies that sponsor the Programme and some of the participating institutions as described in section 4.2.3.

The functions of this committee will be to take part in the financial management of the Programme, channel resources to each one of the executing units, ensure consistency and continuity in the activities, and manage the mechanisms for monitoring and evaluating Programme performance and the impact it produces.

b) Programme Advisory Committee

This Committee will be composed of important personalities in the fields of agricultural research, and of organization and management technologies.

Its functions will be to : a) advise on the orientation, content and scope of the training and research activities, and (b) to carry out periodic reviews or evaluations of the implementation of the Programme and the degree to which the objectives are being met. The competence and expertise of the members of this committee will contribute to give legitimacy to the Programme.

IFARD'S Role

Since the initiative leading to the development of this Programme originated in IFARD, IFARD shall be responsible for the final formulation of the Programme. Once the programme proposal is ready, IFARD will submit it to the consideration of IDRC and other funding agencies.

4.8. Development of the Programme

The proposed duration of the Programme is five years. Following the modular structure of the Programme, the different activities described in section 4.6. will be implemented gradually over the first two years. A possible outline of activities for the first year could be as follows (see section 4.6. for a description of each activity):

- 1) Two Interamerican seminars for the level of directors of institutes.
- 2) Two national courses for the levels of programme and project management and supporting services management.
- 3) Initiation of one research activity.
- 4) Preparation of two units of teaching material.

The activities that could be carried out during the second year are as follows:

- 1) Three Interamerican seminars for the level of directors of institutes, on different subjects relating to research management.
- 2) Four national courses to be held in different countries, for the levels of programme and project management and supporting services management.
- 3) Two Interamerican courses for the levels mentioned in 2), on different subjects relating to research management.
- 4) Carrying out two research activities.
- 5) Preparing two units of teaching material.

This second-year scheme would be repeated in the following years.

The Advisory Committee of the Programme will meet once a year to plan in detail the activities that are to be carried out in the following year.

At the same meeting, an evaluation will also be made of the activities carried out in the preceding year.

4.9. Estimated Costs

Although it is too early to formulate a detailed budget, in this section a rough estimate is presented of the funds required to carry out each of the actions envisaged, in order to give an idea of the order of magnitude of the cost of the programme. Furthermore, by presenting unit costs of activities (following the modular structure of the programme), it also becomes possible to implement gradually parts of the Programme depending on the availability of funds.

The tentative, preliminary estimates (per seminar or unit action), in terms of US dollars, are as follows:

<u>Type of Activity</u>	<u>U.S.\$</u>
1. Seminar for institutional management level.	30,000
2. National courses for intermediate level.	20,000
3. International course.	60,000
4. Scholarships (per scholar).	30,000
5. Research (average cost per study).	30,000
6. Preparing one unit of teaching material.	5,000
7. Operation of Programme Advisory Committee (2 meetings each year).	18,000
8. Dissemination and institutional network maintenance activities.	10,000

The estimated cost of Programme coordination and the technical secretariat is US\$40,000 per annum; it is understood that contributions will be received from various sources to finance some of the components of this item, as follows:

- Coordinator's salary.
- Secretariat and office infrastructure costs.
- Travel and per diem costs with respect to travel in the region by the coordinator, in order to visit the institutions participating in the Programme, and to organize the activities planned.

Some of the international or regional organizations interested in sponsoring the regional programme could contribute part of these costs related to the general coordination and functioning of the Programme (i.e. ISNAR, CIAT, etc.). Different alternatives could be considered, and would have to be defined and agreed upon in the final phase of the formulation of the programme.

4.10 Steps to be Taken in the Final Formulation of the Programme

Several stages have to be completed before the Programme can actually be launched:

- 1) The Workshop that is summed up in this paper terminated the first stage, which gave rise to the preliminary proposal presented in this document.
- 2) This preliminary proposal will be submitted to the participating institutions to obtain corroboration of their interest and to give them an opportunity to present suggestions regarding the final design of the Programme.
- 3) Upon confirmation by these institutions of their interest, work will begin on the final design of the Programme. The following institutions have undertaken to make the following contributions with respect to this phase:

- a) The "Instituto Colombiano Agropecuario" (ICA), with the support of the Colombian Ministry of Agriculture, has offered to provide someone to carry out the duties of Secretary to IFARD and who could be a potential Coordinator of this Regional Programme. This IFARD/ICA person will be responsible for drawing up the final proposal which shall be submitted to IDRC and other funding agencies.
 - b) ISNAR will make available one staff member to work together with the IFARD/ICA representative in formulating the Programme.
 - c) IDRC (LARO) will pay for the travel and per diem expenses of the IFARD/ICA representative, in a visit to some of the countries of the region to be carried out by the two previous persons, in order to identify other participating institutions and to discuss the contents of the Programme with potential members of the Programme. ISNAR will cover the travel costs of their staff member.
- 4) Once the final Programme has been drawn up, it will be discussed in IFARD, before submitting the formal request for funding to IDRC and other financial agencies.

It should also be pointed out that IICA has expressed strong interest in co-sponsoring this regional programme, and in providing the facilities and the staff to manage and coordinate it.

ANNEX No. 1

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ANNEX No. 2

WORKSHOP ON AGRICULTURAL RESEARCH MANAGEMENT

Bogotá, March 21-23

List of Papers Presented

1. Basic Document of the Workshop:
 - a) "The Problem of Agricultural Research and Training of Managers", by Roberto Martínez Nogueira.
2. Papers Presented in the Course of the Discussions:
 - a) "Brazilian Experience in Science and Technology Management", by Jacques Marcovitch.
 - b) "The Most Urgent Problems and Work Methodology", by Luis Marcano.
 - c) "ISNAR and Management Training for Agricultural Research", by William Gamble.